



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,533	09/02/2005	Alan J Smith	P08595US00/DEJ	1783
881	7590	06/20/2007	EXAMINER	
STITES & HARBISON PLLC			GAWORECKI, MARK R	
1199 NORTH FAIRFAX STREET			ART UNIT	PAPER NUMBER
SUITE 900			2884	
ALEXANDRIA, VA 22314			MAIL DATE	DELIVERY MODE
			06/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/533,533	SMITH ET AL. <i>clv</i>
	Examiner	Art Unit
	Mark R. Gaworecki	2884

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 02 September 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-32 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-18,20,22-26 and 28-30 is/are rejected.
- 7) Claim(s) 19,21,27,31 and 32 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 02 May 2005 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>2/23/06</u> | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "at high frequency" in claim 10 is a relative term which renders the claim indefinite. The term "at high frequency" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2884

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-7, 9, 10, 12, 14, 20, and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by LaDelfe *et al.* (4,595,832).

With respect to claim 1, LaDelfe shows a radiation sensor (abstract) comprising a first layer forming a first electrode (first electrode, 34, with optical coating, 38), wherein the first layer separates the incident radiation into a reflected part and an unreflected part (column 4, lines 13-24); a second layer having an electrical property dependent on an intensity of radiation absorbed by the first layer (sensor, Fig. 4)); and a third layer forming a second electrode (second electrode, 36).

With respect to claims 2 and 3, LaDelfe describes a variety of optical coatings with reflective surfaces, including specularly or diffusively reflective surfaces (column 4, lines 13-40).

With respect to claims 4-7 and 9, LaDelfe shows a fourth layer on the first layer, which is transparent to radiation (first modifier, 40, column 3, lines 62-66). Further, this fourth layer can be a protective layer, a partially reflective layer, or a spectral selector (column 3, line 62-column 4, line 2). Further, this layer also conforms to the shape of the first layer (Fig. 4).

With respect to claims 10 and 12, LaDelfe shows an electrical termination, specifically an active element impedance matched to the

impedance of the device with an output impedance of 50 ohms (column 6, lines 18-64).

With respect to claim 14, LaDelfe describes the use of a pyroelectric detector, such as strontium barium niobate (abstract).

With respect to claim 20, LaDelfe shows a third layer with a shape to which the first and second layers conform (Fig. 4).

With respect to claim 29, LaDelfe shows the detector to be sensitive to wavelengths within the claimed range (See Fig. 1).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over LaDelfe (4,595,832).

With respect to claim 8, LaDelfe, as applied to claim 4 above, does not specifically teach the use of multiple modifier layers on the first electrode. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use more than one of the disclosed modifier types (column 3, line 62-column 4, line 2) in order to tailor the incident radiation for the specific application being performed.

With respect to claim 11, LaDelfe, as applied to claim 10 above, does not specifically show a passive electrically resistive element of 50 ohms, however, LaDelfe does show an active electrically resistive element, which performs the exact same function and would have therefore been an obvious alternative.

8. Claims 13, 15, 16, 28, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over LaDelfe (4,595,832), in view of Endou *et al.* (4,792,682).

With respect to claim 13, LaDelfe does not show the claimed FET input high frequency preamplifier as an active element. However, Endou shows a FET input high frequency preamplifier (column 5, lines 12-29) in a similar radiation detector (abstract). This type of preamplifier is commonly used in detectors of this type and would have been an obvious alternative to one of ordinary skill in the art, depending on the specific application for the sensor.

With respect to claims 15 and 16, LaDelfe, as applied to claim 14 above, fails to show the use of piezo-electrically and/or pyro-electrically active polymer. However, Endou shows a similar radiation detector (abstract), in which pyro-electrically active polymers can be used (column 3, lines 14-29). As shown by Endou, these materials are well-known to those of ordinary skill in the art and would have been obvious alternatives for this particular application.

With respect to claim 28, LaDelfe, as applied to claim 1 above, discloses a metal first layer (column 3, lines 52-56), but does not specify the use of the claimed materials. Endou discloses semi-transparent metal coatings for detectors of this type, including gold, silver, aluminum, or copper (column 2, lines 55-62). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use one of the claimed metals in a sensor of this type, as they are known to possess the semi-transparent properties required by LaDelfe.

With respect to claim 30, LaDelfe, as applied to claim 1, does not specify the thickness of the reflective layer. Endou, however, discloses two alternatives for this purpose, ranging from 500-3000 Angstrom or 30-200 micrometers (column 2, lines 55-67). Thicknesses in this range are conventionally known and demonstrated by Endo, and would optimized for the specific application and radiation band being measured.

9. Claims 17, 18, and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over LaDelfe (4,595,832) and Powell (5,030,827), in further view of Endou *et al.* (4,792,682).

With respect to claims 17 and 18, LaDelfe, as applied to claim 1 above, fails to specifically show a support surface of an electrically insulating substrate. However, the radiation detection arrangement of Powell (Fig. 5) shows the use of such a substrate (24, shielding material, column 7, lines 40-54). The use of an insulating substrate to carry a

radiation detector of this type is commonly known and would have been obvious to one of ordinary skill in the art, as an insulating substrate provides a structural basis for the detection unit, as well as a means for protecting and/or housing sensitive components beneath the surface. As for the limitation of claim 18, the preformed shape in this case would be flat and therefore the flat layers above would conform to this shape.

With respect to claims 22-25, referring to the rejection of claims 17 and 18 above, Powell further shows the substrate to be any suitable support, including, but not limited to, a circuit board bearing electrical circuit elements. Therefore, an arrangement comprising an insulating material and a circuit board underneath, or simply a circuit board as a substrate, would have been obvious to one of ordinary skill in the art as suggested by Powell (column 7, lines 40-43). Further, although this combination does not specifically show a preamplifier (simply electrical circuit elements), Endou shows the use of an amplifier unit using a FET (Fig. 3). Amplifier units of this type are commonly used and would have been obvious to include as part of the electrical circuit elements in order to perform the necessary signal processing.

10. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over LaDelfe (4,595,832), in view of Smith *et al.* (4,379,971).

With respect to claim 26, LaDelfe, as applied to claim 1 above, fails to show a means for screening radio frequency interference. However,

Smith discusses the prevention of such interference, and a means for such prevention is shown (grounding of electrode, column 4, lines 37-49). It would have been obvious to one of ordinary skill in the art at the time the invention was made to compensate for external interference in order to achieve accurate measurements without extraneous interference noise.

Allowable Subject Matter

11. Claims 19, 21, 27, 31, and 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
12. The following is a statement of reasons for the indication of allowable subject matter:

With respect to claims 19 and 21, the prior art as applied above, fails to show the use of a concave support surface or a concave third layer.

With respect to claim 27, LaDelfe, as applied to claim 1 above, does not show the use of a screening can with an aperture through which electromagnetic radiation can pass. Although Smith *et al.* suggests shielding against radio frequency interference (column 4, lines 37-49), this reference also does not show the claimed screening can.

With respect to claims 31 and 32, LaDelfe, as applied to claim 1 above, fails to show the use of a segmented third layer to produce a

Art Unit: 2884

plurality of conductive areas electrically isolated from each other. Although Endou shows a segmented upper electrode (7 and 8, Figs. 2B and 4), it is also disclosed that the detector contains identical segments matching electrodes 7 and 8, therefore this detector would not include a segmented first layer and continuous third layer or vice versa.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

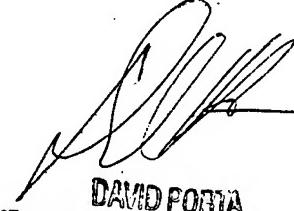
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark R. Gaworecki whose telephone number is (571) 272-8540. The examiner can normally be reached on Monday through Thursday, 7:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2884

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MG
12 June 2007



DAVID PORIA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2884